

INTRODUCTION

The Medicare Conditions of Coverage mandate the annual administration of the Kidney Disease Quality of Life questionnaire (KDQOL-36). The widespread utilization of this instrument will inevitably lead to numerous studies examining the concurrent and predictive association between KDQOL-36 scale scores and clinical outcomes.

The KDQOL was originally validated on 165 patients in 1997. It is well documented that dialysis patients have greater disease burden today than 13 years ago. As such, it would be prudent to revalidate the instrument in a large, more contemporary dialysis population.

The objective of this study was to examine the internal validity of the KDQOL-36 in a large sample of dialysis patients.

METHODOLOGY

32,926 KDQOL-36 surveys were administered to patients at a large U.S. dialysis organization between October 2009 and August 2010. We conducted the following analyses:

- Confirmatory factor analyses: principle components with varimax rotation)
- Internal consistency: Cronbach's alfa, and Cronbach's alfa with sequential items removed
- Item-total correlations
- Scale score distributions: Mean, SD, skewness and kurtosis

RESULTS

Figure 1. Scree Plots for KDQOL-36 Subscales from Principle Components Factor Analysis (Varimax Rotation)

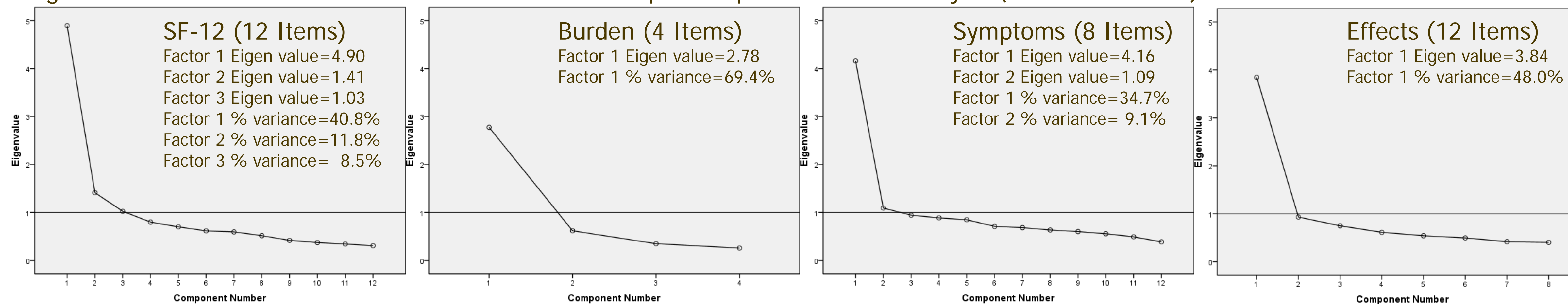
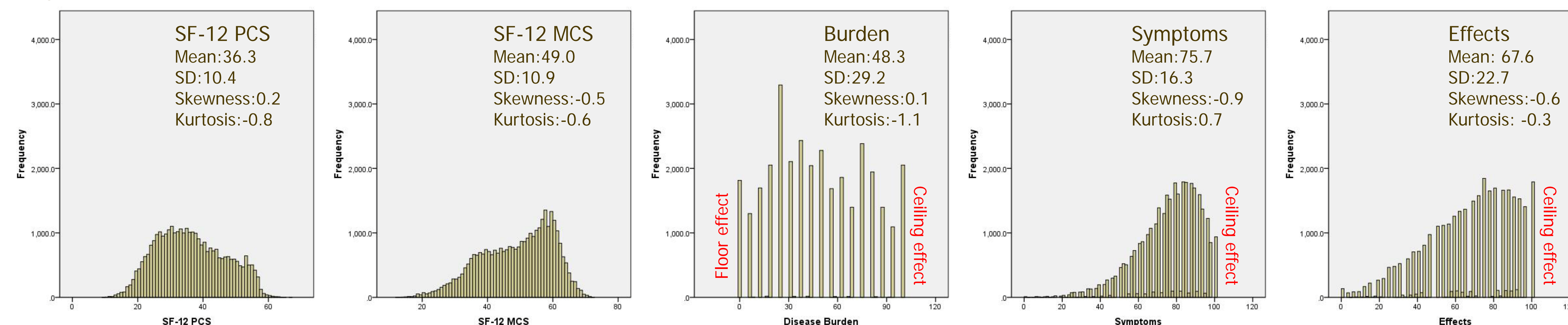


Table 1. KDQOL-36 Subscales Cronbach's Alfa, Maximum Cronbach's Alfa with Items Removed, and Item-total Correlation Ranges

	SF-12*		Kidney Disease		
	Physical	Mental	Burden	Symptoms**	Effect
Cronbach's alpha	0.60	0.57	0.85	0.83	0.84
Maximum Cronbach's alfa with items deleted	0.66	0.56	0.86	0.83	0.84
Item-total correlation range	-0.35 to 0.59	-0.39 to 0.54	0.57 to 0.74	0.30 to 0.59	0.44 to 0.68

* From forced 2-factor solution
** From forced 1-factor solution

Figure 2. KDQOL-36 Subscales Distributions



SUMMARY of RESULTS

SF-12

- Did not confirm 2-factor solution; factor structure not stable in dialysis patients
- MCS explains only 11.8% of scale variance
- Poor internal consistency (Cronbach's alfa < 0.70); internal consistency improves with item removal
- Poor item-total correlations (Table 1)
- Scales not normally distributed (Figure 2)
- No floor or ceiling effects

Kidney Disease Scales

- **Burden:** 1 factor solution explains 69.4% of scale variance (Fig 1)
- **Symptoms:** 2 factor solution but 2nd factor consists of itchy/dry skin only; 1st factor explains 34.7% of scale variance
- **Effects:** 1 factor solution explains 48.0% of scale variance
- All Kidney Disease scales have good internal consistency; show no significant increase in Cronbach's alfa if items are removed; all are non-normally distributed (platykurtotic and skewed); all have significant floor and/or ceiling effects

KEY LEARNINGS

- ✓ The KDQOL-36 lacks adequate internal validity in contemporary dialysis patients.
- ✓ Increased disease burden in this contemporary sample may explain ceiling effects.
- ✓ Future research should evaluate external validity.
- ✓ Alternate scoring algorithms need to be explored.

We express our sincere appreciation to the teammates in our nearly 1600 clinics who work everyday not only to take care of patients but also to ensure the extensive data collection on which our work is based. We thank DaVita Clinical Research® for support in preparing this poster. DCR is committed to advancing the knowledge and practice of kidney care.

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